

Issues of children's health ecology in Karaganda region (mid-1940s)

*Valeria Kozina*¹, *Zhanara Abdugarimova*¹, *Gulnar Baigozhina*¹, *Zauresh Saktaganova*¹, *Zhanna Mazhitova*^{2*}, and *Dina Kurbanova*²

¹Buketov Karaganda University, 100024, 28, University str, Karaganda, Kazakhstan

²Astana Medical University, 010000, 49a, Beybitshilik str, Astana, Kazakhstan

Abstract. The article deals with the medical care of children during World War II through the system of hospital and non-hospital care in Karaganda region. The struggle against epidemiological diseases has become one of the primary tasks of the doctors. Prevention of such diseases as measles, diphtheria, dysentery, whooping cough, etc. was carried out by vaccination, revaccination, strengthening of infant nutrition and other measures. Gastrointestinal diseases were also among the causes of infant mortality. The fight against gastrointestinal diseases was also an urgent task of the health authorities during the war years. Nurseries were a necessary measure of assistance to working women during the war. The nurseries were under the jurisdiction of the People's Commissariat of Health. The authorities carefully monitored the health of Soviet children, and prevented the mass spread of infectious and gastrointestinal infections among children of Karaganda region.

1 Introduction

During World War II, the Soviet government issued a number of decrees relating to the protection of children's health ("On measures to improve the work of the People's Commissariat for Health and children's institutions for medical care and strengthening nutrition for needy children", "On strengthening measures to combat children's neglect and homelessness", "On measures to improve children's health in the summer period during 1943 and 1944" and others). Resolutions of the Government adopted during the war created the material basis and helped health workers to resolve the major issues of preventive and curative care for children.

In the early years of the war children's health care was financed on the leftover principle, which caused serious problems with the medical care of Soviet childhood [1–5]. Difficult material and living conditions, food shortages, and evacuation processes intensified the already difficult epidemiological situation in the country. A number of publications by domestic and foreign authors are devoted to the study of the problems of children's health care during the war years [6–13].

* Corresponding author: mazhitova_69@mail.ru

2 Materials and Methods

The authors used problem-chronological, historical-genetic, historical-typological and other special-historical methods. Along with general scientific methods (comparative analysis and synthesis, induction and deduction, system-functional, structural-functional method, etc.), natural-science methods were used. For example, mathematical-statistical and quantitative methods, etc. when working with statistical data were used. Statistical methods aimed at collecting quantitative data allowed us to identify patterns in reducing the incidence of infectious diseases among children in Karaganda region by year.

3 Discussion of the results

3.1 The incidence of infectious diseases

The network of children's institutions of the People's Commissariat of Health grew during the war years in the Kazakh SSR. There were 48 nurseries with 201 beds in 1940, 64 nurseries with 3,335 places in 1944, seasonal nurseries 70 for 2,146 places in 1940, 183 nurseries for 6,200 places in 1944 in Karaganda region. There were 13 children's hospitals in 1940, the network had expanded to 29 by 1944, 13 of which were in rural areas. There were 47 nurses in the cities and 21 in the rural areas by 1944 [14]. Table 1 shows the demographics of the Karaganda region's child population at the beginning of 1945.

Table 1. The number of children in Karaganda region at the beginning of 1945.

Children's ages	Quantity
0–1 year	736
1–3 years	1592
or 4 years	1101
5–7 years	3071
8–11 years	2524
12–14 years	1680
Total	10704

Children's consultations covered children from 0 to 4 years old. At home, children were served by home health nurses. There were two for every doctor in urban consultations and one home health nurse for every doctor in rural areas. There were 67 kindergartens, which served more than 6,000 people, 3 orphanages with a population of 1,562 people, 374 schools with more than 40 thousand students, and a nursery, which opened in December for 30 children in the region [15].

The incidence of morbidity among children who attended children's educational institutions with medical care in 1943 and in 1944 is shown in Table 2.

Table 2. Morbidity of children in Karaganda region for 1943–1944 (per 10 thousand population).

Name of the disease	1943 y.	1944 y.
Measles	4.5	7.6
Scarlet fever	7.2	2.06
Diphtheria	8.3	2.2
Whooping cough	14	6.3
Varicella	11	4.2
Parotitis	3.6	11.2
Rubella	0.9	0.4
Cerebrospinal meningitis	0.8	0.2
Dysentery	12.2	3

Toxic dyspepsia	8.6	1.4
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As can be seen from the above data, children's infections in 1944 sharply decreased in comparison with 1943, except for two infections – measles and mumps, which gave an increase. The incidence of measles began in the region in March 1944. The first case appeared in a nursery in Balkhash city and 4 cases in a nursery school in Karaganda. In both cases, measles was brought in from other areas. In April, 4 more cases appeared in the same nursery in Balkhash, despite the fact that the sick children had been vaccinated. But not enough serum was administered to the children, and the children became ill with measles. There were 4 cases of measles in Kirovsky district among unorganized children. There were already 40 cases of measles in the region in June 1944, 55 – in July, 90 – in November [16].

3.2 Prevention of infectious diseases

For preventive measures against measles, 1,588 children were inoculated in 1944, an average of four inoculations per sick child. Vaccinations mainly covered organized children, while unorganized children were not vaccinated widely enough. This factor was one of the causes of the spread of measles in the region.

The incidence of scarlet fever and diphtheria decreased by more than 3 times compared to 1943 and was mainly in the cities of Karaganda, Balkhash, and Dzhezkazgan. The incidence of dysentery and toxic dyspepsia decreased sharply, which is explained by a decrease in the number of young children (under one year of age) who mainly have had these diseases. Prevention work was also carried out in children's groups.

The incidence of gastrointestinal diseases in 1944 was expressed in the following figures (per 10,000 population). See table 3.

Table 3. Incidence of gastrointestinal diseases.

Name of the disease	1943 y.	1944 y.
Dysentery (up to 2 years old)	12.9	3
Toxic dyspepsia	1.4	8.6
Simple dyspepsia	124.7	79.9

Gastrointestinal diseases occurred mainly in urban areas and very little in rural areas. In the cities, it was mostly unorganized children who were sick, and gastrointestinal illnesses were rare in children's groups. The hospitalization of children with dysentery in 1944 was better than in previous years. 94.5% of children with dysentery were hospitalized in 1943, 0–100% in 1944. The following vaccinations were carried out to prevent infectious and gastrointestinal diseases: against dysentery – 16,226, against smallpox – 3,938, against dyspepsia – 28,082 (140.4% of the plan) and 27,076 children were revaccinated. 8,410 children under 2 years of age were tested for malaria. Pertussis has spread among children in small amounts, but with serious complications. Measles also gave complications in the form of pneumonia, which caused a high measles mortality rate – 7–8%.

The fight against infectious diseases through vaccination was carried out throughout the USSR [17]. Table 4 presents data on vaccination and revaccination against diphtheria by cities, urban and rural districts of Karaganda region in 1944.

Table 4. Implementation of the plan of vaccination and revaccination of the children population of Karaganda region against diphtheria in 1944.

Name of the district, city	Vaccination plan (%)	Revaccination plan (%)
Osakarovskiy district	350	132
Voroshilovskiy district	436.7	112

Karkaralinskiy district	41.3	74.7
Kounradskiy district	56.6	48
Ulytau district	59.2	56
Balkhash city	38	30.9
Dzhezkazgan city	643	48
Leninskiy	88.5	435
Stalinskiy	123.3	172
Kirovskiy	169.9	272.5

Voroshilovskiy, Osakarovskiy, Telmanskii districts achieved the best results in reducing childhood infections and preventive vaccinations among rural areas. Among urban areas the best results were in Stalinskiy district (Karaganda, Balkhash and Dzhezkazgan cities).

Tuberculosis was very widespread among the child population in the USSR [15, 16]. The following work was done to combat tuberculosis among children: a Pirquet reaction was performed for 9,950 children, 1,804 of them tested positive. 1,913 children were put through X-rays. The tuberculosis nurseries had 120 places, and 320 children passed through it in 1944. There was one group for 30 children in kindergartens. 755 children received a weight gain of 1.5–2 kg in the canteens for tuberculosis children in October and December. 478 children passed through recreational tuberculosis institutions [18].

3.3 Hospital and out-of-hospital care for children

There were 2 children's hospitals in Karaganda and Balkhash cities and 8 children's departments in general hospitals in the region – a total of 470 beds, including somatic – 175, infectious – 140, tuberculosis – 145. There were 3,050 children who went through semantic hospitals, 221 through infectious diseases hospitals and 291 through tuberculosis hospitals. Bed occupancy rate at Karaganda Children's Hospital was 104%, in Balkhash – 106.1%. The duration of children's length of stay was 16.2 days. On averaged, laboratory tests per child were about 4, physical procedures – 1.7 and blood transfusions – 0.19. Only 12.1% of the deceased were autopsied due to a lack of qualified staff. The hospital mortality rate in the Karaganda hospital was 10.51%. 25% died in the first day among the children who died in the Karaganda hospital. Children's hospitals and hospital departments were supplied with food satisfactorily. There was an acute shortage of underwear and outerwear for children [19].

Out-of-hospital care was provided to the pediatric population through counseling district system. Due to the departure of a significant number of pediatric staff from the region, many children's clinics were forced to increase the size of the areas, as well as to use paramedics. The main work of children's clinics was to serve newborns and weakened children, to cover therapeutic and preventive care for unorganized childhood, including special contingents of children.

Some clinics have made significant progress in serving newborns. 90–95% of newborns were attended by nurses during the first 3–4 days after discharge from the maternity hospital in the mine clinic named after Gorbachev and in the Balkhash clinic. This work was insufficiently carried out in Novyi Gorod, Bolshaya Mikhailovka, Maikuduk, Dzhezkazgan consultations.

Outpatient care was provided for sick and healthy children in pediatric clinics. Day clinics were organized at children's hospitals for 67 beds to provide aid to children with simple dyspepsia. 264 children treated at such clinics. Breast milk collection points were organized to supply needy children with breast milk. The total breast milk was 3,041 liters, most of which was collected by children's institutions in Balkhash. Mikhailovskaya consultation collected breast milk during whole year in Leninskiy district of Karaganda, the

other consultations collected breast milk only during the summer months. Even large consultations (Novyi Gorod, Kirov Mine) did not focus on this issue. The situation with the collection of breast milk in nurseries was also bad [20].

Recreational organizations covered 1940 people in 1944, i.e., almost 3.5 times more than they planned. Schoolchildren from collective farms are not sufficiently covered by recreational organizations. Only 200 collective farm pioneers were covered instead of the plan of 800 children. Food was given to 3,000 weakened children, to the children of front-line soldiers and to 400 children with tuberculosis in the canteen. Unfortunately, the quality of nutrition at food stations and dairy kitchens was unsatisfactory due to the lack of milk, but nevertheless, the plan was fulfilled by 169% [21].

In the fight against dystrophy, the children's clinics have done thorough work and have achieved significant results. There were 549 dystrophics on the register of consultations at the beginning of 1944 in Karaganda, there were already 356 of them by the end of the year. There were 200 dystrophic children on the registry in Balkhash, there were 178 by the end of the year. The process of children's recovery from the state of dystrophy was very difficult because of the lack of a regular supply of milk, sufficient vegetables, fruits, etc.

Children from 4 to 14 years were served partly by consultations and partly by children's clinics of general polyclinics. Oral hygiene activities were conducted among preschool and school-age children. Of the 11,295 children who passed through the dental office, 2,376 children underwent oral hygiene treatment. Children's services were hampered by the lack of transportation, as well as by the large size of the consultation areas. Another obstacle was that doctors and nurses were not provided by warm clothes and footwear. In accordance with Decree No. 1571 of the Council of People's Commissars of the USSR of November 10, 1944, the clothes and shoes allocated for this purpose were not received for the fourth quarter. Children's nurseries did a lot of work on the introduction of breastfeeding. In some nurseries breastfeeding mothers were given hot breakfasts and lunches.

3.4 Children's nurseries

The work of nurseries in the cities of Karaganda region was very successful: Karaganda – 98.7%, Balkhash – 102%, Dzhezkazgan – 105%. There was a failure to implement the plan for serve the population with nursery care in most rural areas: Telmanskiy – 113%, Zhana-Arka – 109%, Nurinskiy – 98.2%, Voroshilovskiy – 88.3%, Karkaralinskiy – 71.7%, Osakarovskiy – 66%, Ulytauskiy – 40.6%, Shetskiy – 34.7%. Most nurseries worked on a long working day – 10–12 hours, 21 nurseries had round o'clock groups for 460 places, which amounted to 17.4% of the entire nursery network. In connection with the decree, 80 additional night beds were opened, and boarding groups for children with poor living conditions were organized. There were 540 round o'clock nursery beds in the region in 1944, which was insufficient, and it was planned to increase their number to 40% of the nursery fund in 1945 [17].

Children of the special contingent arrived at the nurseries in 1944 (Samarkand). They were very emaciated. The children's staff had to do a lot of work to adapt these children to the conditions of the nursery.

The incidence of infections among nursery children was significant in 1944, which gave a rather high mortality rate. Table 5 presents data on infectious diseases of children in nurseries for Karaganda.

Table 5. Morbidity among children in nurseries in Karaganda in 1944.

Name of the disease	Sick	Died
Measles	46	1
Scarlet fever	10	0
Diphtheria	10	2
Whooping cough	72	1
Varicella	85	0
Mumps	88	0
Dysentery	44	14
Toxic dyspepsia	34	9
Simple dyspepsia	199	10
Pneumonia	150	8
Flu	512	0
Other illnesses	521	17

Quite a large number of sick children occurred in the nurseries of Balkhash and Dzhezkazgan. There were fewer children who got sick in rural nurseries. To combat infections in nurseries, quarantine groups were organized to help curb infection, as well as to reduce the number of days that mothers were released from childcare [21]. In Karaganda, 1,506 children went through quarantine groups. In addition, children with infectious diseases were placed in isolators, through which 522 children passed, spending there 5,080 bed-days. Together with quarantine days, this amounted to 6,586 days of savings for production. Systematic work was carried out to combat dystrophics in kindergartens. There were 180 children in the Karaganda nurseries at the beginning of 1944, and 97 at the end of the year. In Balkhash nurseries there were 80 dystrophics, and 63 at the end of the year. In order to recover children from the state of dystrophy, sanatorium groups were organized, through which 1,020 children passed during three months [22].

4 Conclusion

Thus, the fight against epidemiological diseases among children in Karaganda region during World War II began to intensify in 1943–1944. During this period that most epidemiological diseases went down, mortality among young children decreased. Vaccinations and revaccinations against common infections, such as measles, diphtheria, dysentery, etc. have been one of the effective measures of control. The children who attended the children's institutions were constantly monitored by medical workers, and therefore, the spread of disease in this environment was quickly stopped, preventing the outbreak of an epidemic. Nurseries opened isolators for sick children, as well as quarantine groups. The fight against child malnutrition was actively pursued, but the process was hampered by the scarcity of children's food, the absence of fresh fruits and vegetables in the diet. The work of health authorities was carried out with the help of the system of district pediatrician in Karaganda region. This allowed to partially controlling the epidemiological diseases at the site through early diagnosis and hospitalization. But the disadvantage of the system of medical areas was that they greatly increased during the war due to the shortage of doctors. This has made it difficult to deal with childhood epidemic diseases.

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